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ABSTRACT

This working paper describes the sequential processes of education from primary to higher education in Mexico and the United States. It analyzes the fragmented nature of the educational systems common to both countries and outlines possible solutions for integrating the different systems. It also includes brief overviews and examples of national, state, and local collaborative relationships. The paper concludes with a discussion of ways to nurture and enhance binational collaborative relationships and the required conditions. These include a consortium of individuals with a common vision; allocated monies from federal, state, and/or private agencies; a process for systematically developing and implementing the collaboration; a process for continuous evaluation and modification of the project design; a willingness to make a long-term commitment to the effort; a philosophical underpinning that is shared regardless of differences among participants; and an overarching commitment to improving education for all children. Also included are a list of abbreviations, a table listing secondary school degrees in Mexico by type of degree granting institution, the Carnegie Classification of Institutions of Higher Education, and brief descriptions of collaborative projects in the United States. (Contains 33 references.) (JLS)

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ED 410 827

Understanding the Differences

A Working Paper Series on Higher Education in the U.S. and Mexico

Working Paper #3

The Educational Systems of Mexico and the United States: Prospects for Reform and Collaboration

by
JoAnn Canales,
Leticia Calzada Gómez
and
Nélyda Villanueva

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Working Paper #3:

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by JoAnn Canales, Leticia Calzada Gómez and Néllyda Villanueva

"Understanding the Differences"
A Working Paper Series on Higher Education in the U.S. and Mexico

Western Interstate Commission for Higher Education
P.O. Drawer P
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Western Interstate Commission for Higher Education

The Western Interstate Commission for Higher Education (WICHE) is a public, interstate agency established to promote and to facilitate resource sharing, collaboration, and cooperative planning among the western states and their colleges and universities. Member and affiliate states include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

WICHE's broad objectives are to:

- Strengthen educational opportunities for students through expanded access to programs,
- Assist policymakers in dealing with higher education and human resource issues through research and analysis,
- Foster cooperative planning, especially that which targets the sharing of resources.

In 1993, WICHE, working in partnership with the Mexican Association for International Education (AMPEI) developed a binational project to facilitate educational interchange and the sharing of resources across the western region of the U.S. and with Mexico. This publication was developed as a resource for the project and as part of a series entitled "Understanding the Differences," created under the direction of WICHE's Special Projects and Research and Policy Analysis Units.

Funding for the working paper series was provided by The Ford Foundation. Other publications in the series include:

- Working Paper #1: *Policy Approaches to Evaluation and Incentive Funding in the U.S. and Mexican Higher Education* (Publication Number 2A261)
- Working Paper #2: *Higher Education Faculty in Mexico and the United States: Characteristics and Policy Issues* (Publication Number 2A262)
- Working Paper #4: *Higher Education's Responsiveness in Mexico and the United States to a New Economy and the Impacts of NAFTA* (Publication Number 2A264)
- Main comparative essay: *Understanding the Differences: An Essay on Higher Education in Mexico and the United States*—forthcoming, 1995. (Publication Number 2A265).

Copies of the working papers are available through the WICHE Publications Office at the address below, or via voice mail at (303) 541-0290 or via fax at (303) 541-0291. Price per working paper is $8.00 plus $3.00 for postage and handling (within the U.S.). Please contact the publications office directly for international postage rates.

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Preface

A major obstacle to binational educational interchange across the U.S.-Mexican border is that educational policymakers and practitioners lack familiarity with the structures and issues of each other's educational systems. There are often assumptions on both sides that the two systems function similarly. To date, only limited information exists on educational policy issues affecting the United States and Mexico, particularly in a comparative context.

In an effort to fill that void, and with the encouragement of The Ford Foundation Director for Education and Culture, Alison Bernstein, and the Foundation's support, WICHE has developed a series of five reports, entitled *Understanding the Differences*. The series analyzes the major policy issues and differences in each country, so that meaningful discussions among higher education leaders and policymakers may occur toward the goal of developing new binational initiatives.

WICHE's *Understanding the Differences* series includes:

- Working Paper #1: *Policy Approaches to Evaluation and Incentive Funding in U.S. and Mexican Higher Education*, by Peter Ewell and Rollin Kent. This paper explores the growing desire shared by the two nations to obtain a significant "return on investment" in postsecondary education. The authors establish a context for comparison within Mexico and the United States and discuss the challenges and central policy dilemmas that each country faces as it attempts to implement the policy tools of evaluation and incentive funding. Past experiences and future directions for accountability and categorical funding mechanisms are explored.

- Working Paper #2: *Higher Education Faculty in Mexico and the United States: Characteristics and Policy Issues*, by Cheryl Lovell and Dolores Sánchez Soler. This paper describes and compares Mexican and U.S. faculty characteristics and conditions, including total number of faculty, student-teacher ratios, full- versus part-time status, rank, tenure, average salaries, gender and ethnicity, and union membership. Several contemporary policy issues are explored including faculty evaluation, workload and productivity, curriculum reform, faculty involvement with the business community, faculty development, and implications that NAFTA will have for faculty on both sides of the border. The paper concludes with some suggested areas for collaborative efforts of faculty in the two countries.

- Working Paper #3: *The Educational Systems of Mexico and the United States: Prospects for Reform and Collaboration*, by JoAnn Canales, Leticia Calzada Gómez and Néllyda Villanueva. This paper describes the sequential processes of education (from basic to higher education) in Mexico and the U.S. as a basis for understanding the relationships between the various levels of education. It analyzes the fragmented nature of the educational systems common to both countries and outlines possible solutions for integrating the different systems. Also included are brief overviews and examples of national, state and local collaborative relationships. The paper concludes with a discussion of ways to nurture and enhance binational collaborative relationships.

- Working Paper #4: *Higher Education's Responsiveness in Mexico and the United States to a New Economy and the Impacts of NAFTA*, by Elizabeth Santillanez. This paper discusses the critical role that higher education must play as the U.S., Mexican and Canadian markets become more integrated since the implementation of NAFTA. The paper gives an overview of

recent transformation of economic developments and business needs which require that higher education better prepare students to compete in the global workforce. It describes initiatives currently underway and gives recommendations for higher education policymakers to consider as they develop a workforce which is competitive and culturally-aware.

- The final comparative report: *Understanding the Differences: An Essay on Higher Education in Mexico and the United States*, by Judith I. Gill and Lilian Alvarez de Testa (forthcoming). The goal of this comparative report on higher education in Mexico and the United States is to provide an understanding of the major issues and differences in each country so that meaningful discussions may occur towards the development of new binational programs. While fully acknowledging the distinct contexts particular to each country, the report analyzes shared factors which contribute to the need for reform and change, including a perceived decline in educational quality; increasing enrollment demands; increased social, economic and cultural diversity within the workforce; rapid advances in technology; and increased and global economic competition.

WICHE hopes that this series will foster improved understanding of significant higher education issues in both countries and, over time, lead to new cooperative efforts to increase education opportunities in both nations.

WICHE thanks Alison Bernstein and Norm Collins of The Ford Foundation for their generous support of the general WICHE/AMPEI binational project, and for their recognition of the importance of United States-Mexico policy studies. We are also indebted to Judith I. Gill, former Program Director of WICHE's Research and Policy Analysis Unit, now serving as Associate Vice Chancellor for the Massachusetts Higher Education Coordinating Council. Gill identified the pertinent issues in binational education across our shared border, directed the research component of the project, and molded the information into a highly useful comparative context. Thanks also go to Sylvia Ortega Salazar, president of AMPEI, and Lilian Alvarez de Testa of UNAM who offered important insights in reviewing the papers.

WICHE acknowledges the binational teams of authors: Peter Ewell and Rollin Kent; Cheryl Lovell and Dolores Sánchez Soler; JoAnn Canales, Leticia Calzada Gómez and Néllyda Villanueva; and, Elizabeth Santillanez and her advisor, Paul Ganster. The authors eagerly worked through language barriers, cultural differences and logistical obstacles, in the spirit of true cross-border cooperation and exchange, which should characterize a project of this nature. We hope their cooperative efforts will inspire other researchers to pursue future binational collaborations.

Paula Palmer provided valuable editorial assistance as the papers were developed. Thanks also to WICHE staff members Robin Zúñiga (review of statistics); Debby Jang and Cherie Pederson (graphics support); Kelly Zweifel (library research); and Mary Ellen Keller (production). And finally, WICHE acknowledges Jere Mock for managing the project and her assistance in editing the series, and Margo Schultz for her many contributions including coordinating the communications with the authors and layout of the final manuscripts.

Richard W. Jonsen
Executive Director

Western Interstate Commission for Higher Education
Boulder, Colorado (USA)
April 1995

List of Abbreviations

ACE	American Council on Education	Consejo Estadounidense para la Educación Superior
AFT	American Federation of Teachers	Federación Estadounidense de Profesores
ANUIES	National Association of Universities and Institutions of Higher Education	Asociación Nacional de Universidades e Instituciones de Educación Superior
AMPEI	Mexican Association for International Education	Asociación Mexicana para la Educación Internacional
CQAIE	Center for Quality Assurance in International Education	Centro para la Evaluación de la Calidad de la Educación Internacional
APEC	Asia Pacific Economic Cooperation	Organización para la Cooperación Económica del Asia-Pacífico
AAUP	American Association of University Professors	Asociación Estadounidense de Profesores Universitarias
CAPFCE	Federal Administrative Committee for the Construction of Schools	Comité Administrativo Federal para la Construcción de Escuelas
CETE	Educational Television Training Center	Centro de Entrenamiento en el uso de la Televisión Educativa
CIIES	Interinstitutional Committees for the Evaluation of Higher Education	Comites Interinstitucionales para la Evaluación de la Educación Superior
CINVESTAV	Center for Research and Advanced Studies	Centro de Investigación y Estudios Avanzados
COEPES	State Coordinating Committee for Higher Education Planning	Coordinación Estatal para la Planeación de la Educación Superior
CONACYT	National Council for Science and Technology	Consejo Nacional de Ciencia y Tecnología
CONALEP	National College of Professional Technical Education	Colegio Nacional de Educación Profesional Técnica
CONAEVA	National Commission for the Evaluation of Higher Education	Comisión Nacional para la Evaluación de la Educación Superior
CONPES	Mexican National Coordinating Board for Higher Education Planning	Consejo Nacional para la Planeación de la Educación Superior
CORPES	Regional Coordinating Council for Higher Education Planning	Coordinación Regional para la Planeación de la Educación Superior
COSNET	Council for the National Sytem of Education Technology	Consejo del Sistema Nacional de Educación Tecnológica
CUPIA	Council of Public Universities and Similar Institutions	Consejo de Universidades Públicas e Instituciones Afines

ECS	Education Commission of the States	Comisión Educativa de los Estados
FIPSE	Funds for the Improvement of Postsecondary Education—U.S. Department of Education	Fondo para el Mejoramiento de la Educación Media Superior y Superior — Departamento de Educación de los Estados Unidos
FLACSO	Latin American School of Social Sciences	Facultad Latinoamericana de Ciencias Sociales
FOMES	Fund for Higher Education Modernization	Fondo para la Modernización de la Educación Superior
GATT	General Agreement on Tariffs and Trade	Acuerdo General de Aranceles y Comercio
ICED	International Council for Educational Development	Consejo Internacional para el Desarrollo Educativo
IIE	Institute of International Education	Instituto para la Educación Internacional
IRSC	Institute for Regional Studies of the Californias	Instituto de Estudios Regionales de las Californias
ITESM	Monterrey Institute of Technology	Instituto Tecnológico y de Estudios Superiores de Monterrey
NAFSA	Association of International Educators	Asociación de Educadores Internacionales
NAFTA	North American Free Trade Agreement	Tratado de Libre Comercio de Norteamerica (TLC)
NCHEMS	National Center for Higher Education Management Systems	Centro Nacional de Sistemas Administrativos para la Educación Superior
NEA	National Education Association	Asociación Nacional de Educación
NSF	National Science Foundation	Fundación Nacional para la Ciencia
OECD	Organization for Economic Cooperation and Development	Organización para la Cooperación Económica y el Desarrollo
PROFMEX	Consortium for Research on Mexico	Consorcio para Investigación sobre México
PROIDES	Integral Program for the Development of Higher Education	Programa Integral para el Desarrollo de la Educación Superior
SEIS-ITESM	Satellite Interactive Education System-ITESM	Sistema Satelital de Educación Interactiva
SEP	Mexican Ministry of Education	Secretaría de Educación Pública
SESIC	Undersecretaryship of Higher Education and Scientific Research	Subsecretaría de Educación Superior e Investigación Científica
SHEEO	State Higher Education Executive Officers	Ejecutivos Estatales de Educación Superior

SINAPPES	National System for Long-term Planning in Higher Education	Sistema Nacional para la Planeación Permanente de la Educación Superior
SNI	National System of Researchers	Sistema Nacional de Investigadores
SNTE	Mexican National Teachers' Union	Sindicato Nacional de Trabajadores de la Educación
SPRE	State Postsecondary Review Entities	Comisiones Estatales de Evaluación de Instituciones de Educación Media Superior y Superior
SUPERA	National Program for the Advancement of Academic Personnel	Programa Nacional de Superación del Personal Académico
UABC	Autonomous University of Baja California	Universidad Autónoma de Baja California
UAM	Autonomous Metropolitan University	Universidad Autónoma Metropolitana
UANL	Autonomous University of Nuevo Leon	Universidad Autónoma de Nuevo León
UNAM	National Autonomous University of Mexico	Universidad Nacional Autónoma de México
USDE (DOE)	United States Department of Education	Departamento de Educación de los Estados Unidos
USIA	United States Information Agency	Agencia de Información de los Estados Unidos
WCET	Western Cooperative for Educational Telecommunications (at WICHE)	Cooperativa Occidental para la Telecomunicación Educativa
WICHE	Western Interstate Commission for Higher Education	Comisión Interestatal Occidental para la Educación Superior

INTRODUCTION

Central to transborder collaborations is an understanding of the educational systems of Mexico and United States and the linkages within and between them. A recent study, "Border Issues in Education," (1994) cites three factors that make this understanding essential:

1. Regardless of any actions taken to restrict the flow of immigrants from Mexico into the U.S. and irrespective of the future of NAFTA or similar agreements, approximately fifty million Mexican workers will continue to cross the Rio Grande River annually (some temporarily; others permanently) in search of a better life.

2. Immigrants are not "empty vessels;" to minimize or ignore their knowledge base underestimates the potential resources they have to offer.

3. There is a large number of Mexico/U.S. twin cities whose proximity to each other has resulted in an interdependence that is vital to the economies of both communities.

Additional factors contributing to the need for a mutual understanding of the educational systems are the growing demand for highly skilled individuals in a variety of arenas and the diminishing resources at all levels of education ranging from K-12 to higher education in both countries.

This working paper will describe the sequential processes of education in both Mexico and the United States as a basis for understanding the relationships between the various levels of education. Also included are brief overviews of national, state and local collaborative relationships and sketches of several existing collaborative relationships involving elementary and secondary education. The paper concludes with a discussion of ways to nurture and enhance binational collaborative relationships.

OVERARCHING EDUCATIONAL GOVERNANCE STRUCTURES

Mexico

Mexico's national education entity for public education, created in 1921, is the Secretaría de Educación Pública (SEP—the Mexican Ministry of Education). Its primary function is to regulate and standardize the rights and responsibilities of the country's public school educators. The SEP oversees all educational entities; any agency offering educational services must be officially registered with the SEP prior to offering a course of studies.

The national SEP is the fiscal agent for the Mexican states; its budget represents more than 50 percent of the budget allocated nationally for education. The SEP is organized by function and is further subdivided into Undersecretaryships for Basic Education, Higher Education, and Vocational Education.

In 1991, there was a reversal of the centralization trend of the 1950's and 1970's. The decentralization movement resulted in more oversight authority delegated to each Mexican state. State-level SEPs are in the process of undertaking more "local" initiatives to modernize education; they plan, for example, to set up *Centros de Maestros* (Teacher Centers) that will provide professional development for in-service teachers in the new national curriculum which was also developed in 1991. The national curriculum targets eight areas: mathematics, language arts, natural sciences, technology, art education, physical education, and health education. As a result of the reform, new textbooks have been published in Spanish as well as several native indigenous languages. The new curriculum is similar to curricular reform in the U.S., in that it focuses on a more integrated and interdisciplinary approach to learning, i.e., more connections are made between subject areas and real world events.

The United States

The United States Constitution implicitly relegates the responsibility for schooling to the individual states. There is, however, a United States Department of Education (USDE) that provides financial resources through a grants or entitlement system. The role of the USDE is a supplemental one and is not

intended to supplant, supersede or override the obligation of each state to provide education for its student population.

In most states, there is a state education agency for public schools and a separate statewide higher education agency. The agency head for the public schools is usually elected or appointed by the state governor. The head of the postsecondary agency is most often appointed by a commission or council whose members are elected or governor-appointed. In the past two decades, many states have undertaken educational reform of the public schools, including the adoption of statewide standards for student performance and for individuals seeking state certification or licensure to teach. State mandates for postsecondary education reform have not been as widespread or uniform. However, during this same time frame, many states adopted requirements for higher education assessment programs and new accountability practices.

The primary funding sources for public education are state income taxes and local property taxes. In some states, revenue from lottery sales also is dedicated to the schools. The 50 states vary significantly in the percentage of funding which comes from state and local governments. During the past decade, in an effort to improve education in school districts with relatively low tax bases, some state supreme courts have ruled that a certain dollar amount must be provided for every student from state funds. The dollar amount, determined by state formula, depends on student enrollment numbers. In many states, local education agencies (LEAs) also receive additional funding to implement special programs, e.g., programs for special education students, teaching English as a second language, bilingual education, and improving performance on statewide assessment tests.

BASIC EDUCATION

The structure of basic education in Mexico and the United States is similar (see Figures 1, 2 and 3). There are four levels:

Mexico	United States
Preescolar	Preschool
Primaria	Elementary
Secundaria	Junior High/Middle School
Preparatoria/Media Superior	High School

FIGURE 1

COMPARATIVE CHART OF U.S. AND MEXICAN EDUCATIONAL SYSTEMS

United States

Level of Education		Years in School	Years of Age
Ph.D.	Professional Schools (including Medicine, Teaching, Law)	10+	18+ years
		9	
		8	
		7	
Master's		6	
		5	
Bachelor's		4	
		3	
Associate of Arts		2	
		1	
Secondary School (High School, levels 9/10-12; Junior High School, levels 7-9; Middle School, levels 6-8)		12	12-18 years
		11	
		10	
		9	
		8	
		7	
Elementary School		6	6-12 years
		5	
		4	
		3	
		2	
		1	
Early Childhood Education		K	5
		PK	4
Head Start*			3-5
Even Start*			0-7

Mexico

Level of Education	Years in School	Years of Age
Doctorado	9+	18+ years
	8	
Maestría	7	
	6	
Licenciatura	5	
	4	
Normal	3	
	2	
	1	
Preparatorias (General, Vocational, Teaching, University Track)	3	15-18 years
	2	
	1	
Secundaria (Vocational or General)	3	12-15 years
	2	
	1	
Primaria	6	6-12 years
	5	
	4	
	3	
	2	
	1	
Preescolar	2	5-6 yrs.
	1	3.5/4-5
Inicial		40 days to 3.5/4-5 years

***Federally-funded program**
All ages are approximations
Adapted, courtesy of Dra. Margarita Gomez-Palacio.

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FIGURE 2: MEXICO'S EDUCATIONAL SYSTEM: A FLOWCHART

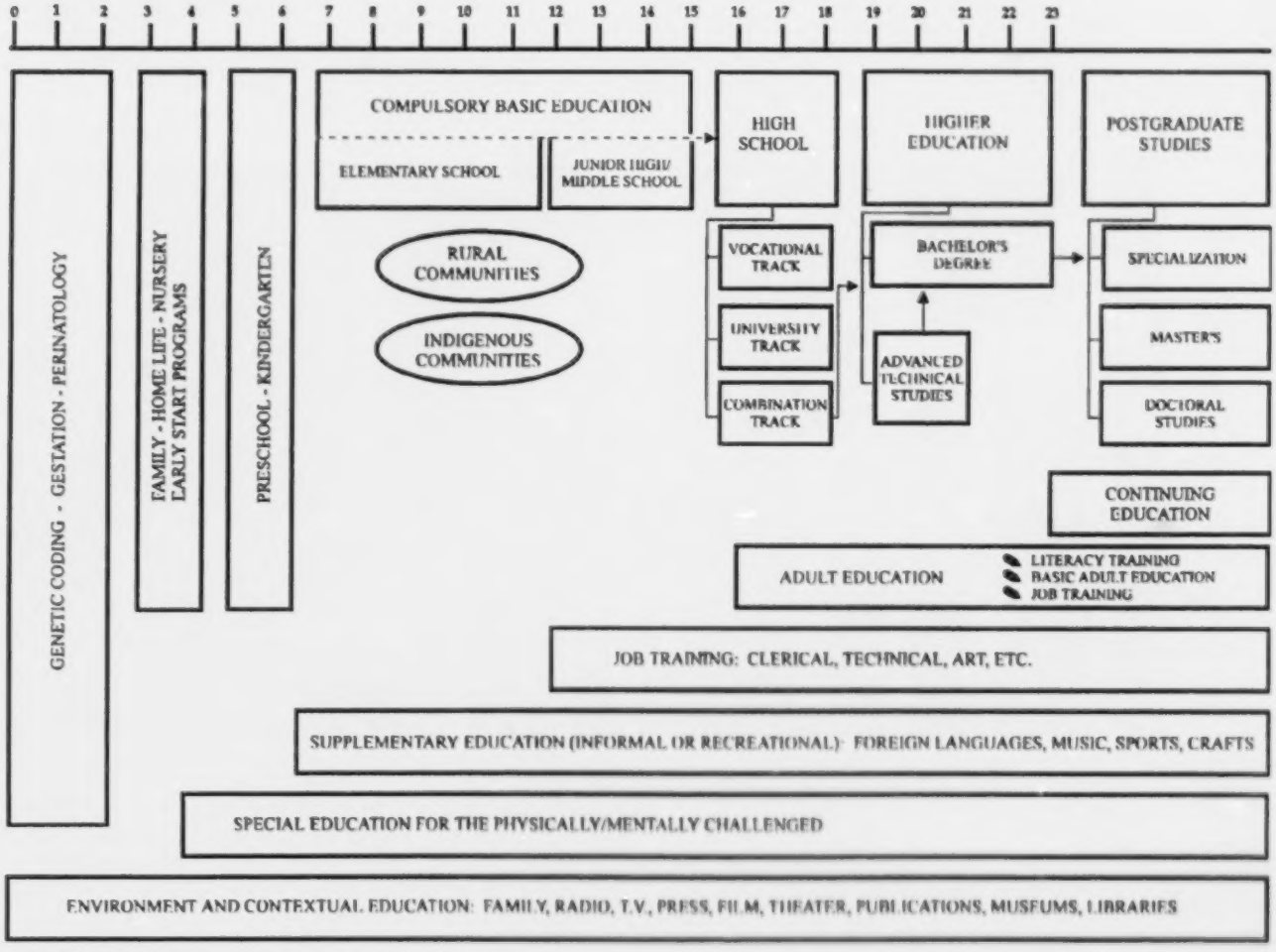
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
GENETIC CODING - GESTATION - PERINATOLOGY
FAMILY - HOME LIFE - NURSERY EARLY START PROGRAMS
PRESCHOOL - KINDERGARTEN
COMPULSORY BASIC EDUCATION
ELEMENTARY SCHOOL
JUNIOR HIGH/ MIDDLE SCHOOL
RURAL COMMUNITIES
INDIGENOUS COMMUNITIES
HIGH SCHOOL
VOCATIONAL TRACK
UNIVERSITY TRACK
COMBINATION TRACK
HIGHER EDUCATION
BACHELOR'S DEGREE
ADVANCED TECHNICAL STUDIES
POSTGRADUATE STUDIES
SPECIALIZATION
MASTER'S
DOCTORAL STUDIES
CONTINUING EDUCATION
ADULT EDUCATION
LITERACY TRAINING
BASIC ADULT EDUCATION
JOB TRAINING
JOB TRAINING: CLERICAL, TECHNICAL, ART, ETC.
SUPPLEMENTARY EDUCATION (INFORMAL OR RECREATIONAL): FOREIGN LANGUAGES, MUSIC, SPORTS, CRAFTS
SPECIAL EDUCATION FOR THE PHYSICALLY/MENTALLY CHALLENGED
ENVIRONMENT AND CONTEXTUAL EDUCATION: FAMILY, RADIO, T.V., PRESS, FILM, THEATER, PUBLICATIONS, MUSEUMS, LIBRARIES

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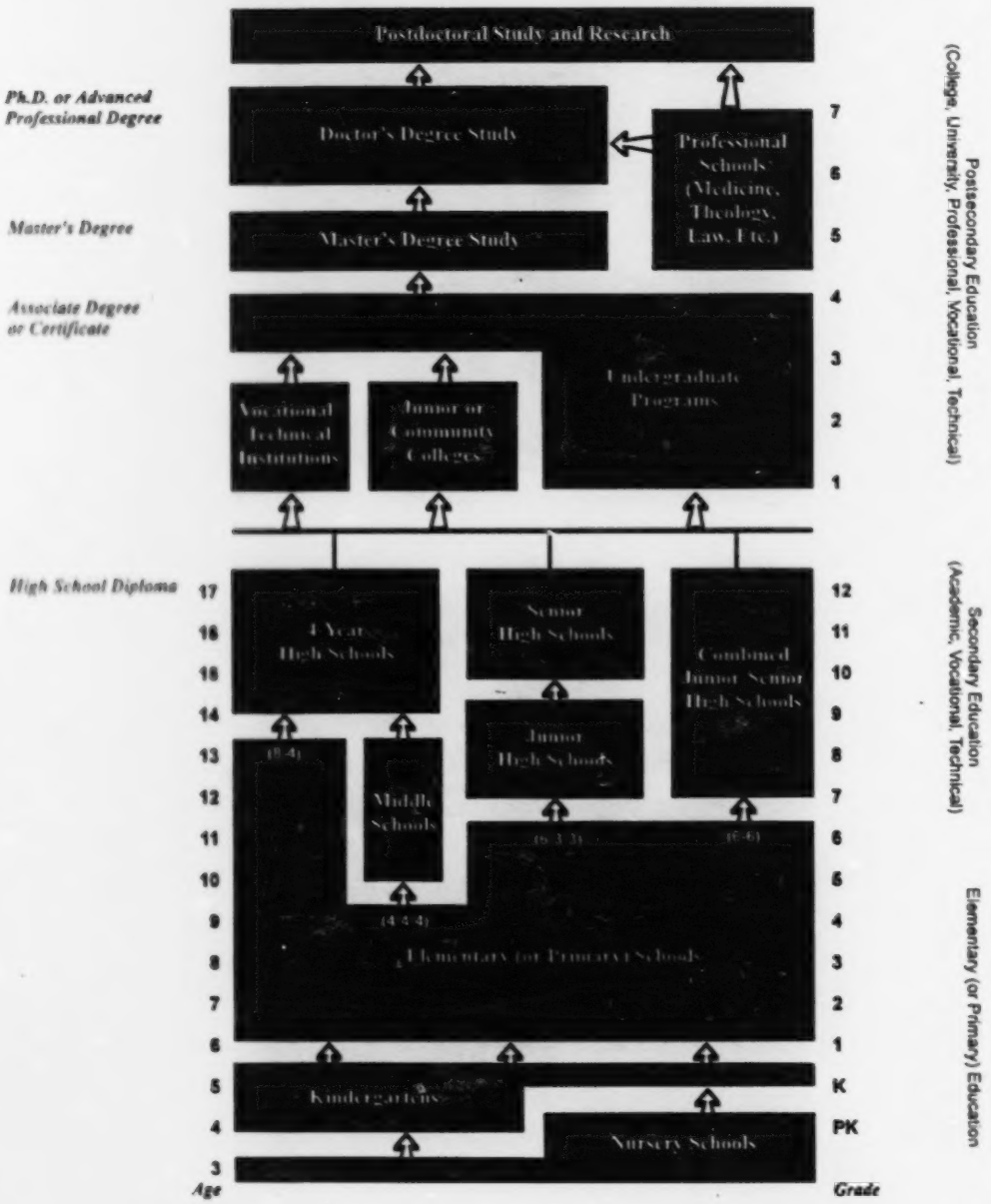
FIGURE 3
THE UNITED STATES EDUCATIONAL SYSTEM: A FLOWCHART



NOTE: Adult education programs, while not separately delineated above, may provide instruction at the elementary, secondary, or higher education level. Chart reflects typical patterns of progression rather than all possible variations.

SOURCE: U.S. Department of Education, National Center for Education Statistics

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In both countries the primary goals of basic education are (1) to provide students with an understanding of the country's history and culture and (2) to enable students to participate in a heterogeneous society and be socially and geographically mobile.

While the United States has offered early childhood and special education programs since the 1960's, especially in regions with a high percentage of low-income families, these programs have only recently been provided in Mexico and are limited to families in urban areas. Early childhood education services in Mexico are targeted for children of working mothers. The age range served is 45 days to three years of age. Special education programs are offered to students with learning disabilities as well as to those who are considered gifted.

An unfortunate reality in both countries is a serious decline in enrollment after the elementary level. Mexico's dropout rate prior to completion of secondary education is 43 percent (ANUIES, 1993). The dropout rate in the United States ranges from 10 to 43 percent depending on a variety of factors including the number of grades repeated and the highest grade repeated. Data show a 10 percent dropout rate among students who have never repeated a grade, compared to 43 percent among students who repeated two or more grades, particularly between the seventh and tenth grades (U.S. Department of Education, 1994).

School attendance is mandatory in both countries at the elementary level; it is also mandatory at the secondary level in the United States. However, in both countries many students from minority or low socio-economic backgrounds leave school prior to graduation. There are many reasons for students' early departure from school but they are primarily linked to inadequate literacy and study skills contributing to lack of success in school, and the need to supplement the family income.

In the United States, federal funds supplement state funding for special populations of students. The 1994 federal budget allocated monies for programs such as Even Start, which serves parents and their children ages 0-7 years old ($91 million); Head Start, which serves children three to five years old ($ 3.3 billion); remedial reading and remedial math and science programs ($6.3 billion); and bilingual education programs ($226 million) (Education Week, 1995). In addition, federal funds are used to provide support services such as school breakfast and/or lunch programs and medical, dental, and clothing support to migrant families and children participating in Even Start and Head Start programs. Federal funding for these programs is channeled through the state education agencies.

Federal funding of education programs in the United States is becoming increasingly important because of the growing number of children who arrive at school ill-fed and ill-prepared to be successful in school. Federal funding ($3.1 billion) also is provided to schools to assist in meeting the requirements of the Americans with Disabilities Act (ADA) (Education Week, 1995). This legislation requires institutions to provide physically and mentally challenged individuals access to institutions and the services they provide. Because of the increasing demands for federal funds, and a recognition of the important relationship that must be developed between basic and higher education, federal funding is increasingly contingent upon the existence of collaboration between institutions of higher education and schools offering basic education (Federal Initiatives, 1994).

PRESCHOOL

In Mexico, kindergarten is not a prerequisite for elementary school and is unavailable to a majority of the children. Preschool programs are provided primarily for working mothers in urban areas who need a safe place for their children during work hours. These programs are also available for children whose parents can afford to pay the preschool fees, help maintain the facilities, and organize fundraising activities to support the programs.

Mexican preschool program offerings vary greatly, but there is a common focus on integrating several learning areas including language, physical, emotional, cognitive and intellectual skills. Although there is no formal articulation of curriculum between preschool and elementary education, children who have attended preschool have a definite advantage over their classmates who have not attended these programs in that they have been socialized into the culture of the school setting. The disadvantage, however, is that the child-centered preschool curriculum, where creativity and critical thinking are valued, is in sharp contrast to the current more rigid, disciplinary structures of elementary school, requiring children to make major adjustments.

In the United States, kindergarten is mandated in some states; there are half-day and full-day programs. Kindergartens are entirely subsidized by the states and parents are not expected to contribute any financial support; even transportation to and from school is provided when necessary. In most states children cannot enroll unless they are five years old by September 1. These programs place a heavy emphasis on oral language and pre-reading skills. Students are expected to be able to read and write before they can be "promoted" to the first grade. A significant drawback to the kindergarten programs in the United

States is that the vast majority of programs are offered only in English, even if the majority of students do not speak English. This creates academic difficulties for many non-English speaking children in kindergarten and in later school years.

ELEMENTARY EDUCATION

The most recent all-encompassing educational reform movement of major significance in the United States began in 1983 with the publication of *A Nation at Risk*, a report prepared by the National Commission on Excellence in Education. Mexico's most recent reform movement began in 1990. Thus, teachers and teacher education programs in the United States have had almost a decade's head start over their Mexican counterparts in adjusting their curricula to meet the demands of reform initiatives. Elementary education has benefited the most from these initiatives.

There are many *similarities* between the two countries with respect to education reform initiatives and teacher preparation. In both countries, current curriculum reform initiatives promote:

- curricula organized into thematic units of instruction, demonstrating a relationship among disciplines and incorporating "authentic" literature. In many cases, the thematic units provide a social perspective enabling students to relate classroom learning to real world needs.
- student-centered learning, including more peer-assisted and self-directed learning, rather than teacher-centered instruction. Teachers are required to be facilitators of learning rather than "talking heads."
- formative assessment of student performance as students engage in everyday activities and authentic situations, rather than assessment of student performance on isolated examinations administered periodically.

In both countries, reform initiatives require a concerted effort to retrain teachers, most of whom were educated in teacher preparation programs that have been criticized for their isolated and unrealistic curricula which do not prepare teachers for the practical realities of the classroom.

The *differences* between the two systems center on the implementation of educational reform initiatives and the conditions of teaching.

Implementation of educational reforms. In some of the states in the U.S., teachers are given a state-approved list of textbooks from which they must choose texts for their courses. In other states, teachers have total discretion in their choice of textbooks. Under some state reform programs, teachers have received considerable administrative support for curriculum planning time, materials, books and opportunities for staff development. Some teachers are given opportunities to attend conferences and visit progressive schools with the expectation that they then share their new information with colleagues and serve as leaders in the professional developmental process. Many states subscribe to the concept of "site-based management" which gives individual school sites total autonomy with respect to curriculum implementation issues.

In contrast, Mexico's teachers have been given the national curriculum in the form of the textbooks which must be used, but they have not received formal training in the new curriculum. Training is to be provided by the Teacher Centers. Current plans call for creating three centers in 1995 in Puebla, Mexico City, and Aguascalientes; training will be provided to teachers who have at least 15 years of teaching experience. This program is heralded as part of Mexico's commitment to upgrade its teaching force.

Conditions of teaching. Mexican preschools and elementary schools (*primarias*) serve students 3 to 12 years of age; U.S. elementary schools have traditionally served students ages 4 to 12. As a result of the reform movement in the United States, however, the groupings of students by age varies greatly, as do the support programs which are offered. Different age and classroom combinations include: grades kindergarten through six; kindergarten through fifth with grade six offered at the middle school; kindergarten through second; and kindergarten through third. Some schools, because of the student population they serve, prefer to have ungraded classrooms and place children in combined classrooms for kindergarten and grade one, second and third grades, and fourth and fifth grades. Regardless of the setting, each classroom teacher is largely responsible for all subject areas, although some schools may hire support teachers in art, music, and physical education. Additional support staff is often available for remedial education, special education, speech therapy, and in some cases, social work.

Other policies which have advanced education reform in the United States include reduced pupil/teacher ratios (e.g., Texas has a state-mandated 22:1 ratio for grades K-5); mandated staff development days and, in some cases, collaborative relationships with higher education institutions or non-profit organizations supported by federal, state, or foundation funding.

Educational reform in Mexico has been hindered by a variety of teaching conditions; among them are:

- the absence of a widespread, systematic professional staff development program which impedes the acquisition of the new national curriculum and the new skills needed to implement it;
- high pupil/teacher ratios that place many physical demands on teachers;
- very low teacher salaries that create disincentives for teachers to put additional time into the present work schedule;
- the need for teachers to work more than one job, which results in high absenteeism among teachers;
- lack of planning time during the regularly scheduled day or annual school calendar;
- lack of facilities in school buildings that create a feeling of professionalism, such as libraries and faculty work rooms.

In Mexico, teachers are also expected to assume responsibility in many non-instructional areas: student hygiene, collecting census data, planning and implementing vaccination programs, assisting with the election campaigns of the primary political party, and maintaining volumes of documentation for a variety of reasons. These additional responsibilities leave little or no time for professional development.

SECONDARY EDUCATION

Types of Secondary Education Institutions

The grades and ages of students in junior high school (or middle school) and high school in the United States are equivalent to the *secundaria* and *educación media superior* (commonly called *preparatoria*) levels of education in Mexico (see Figure 1).

Secundaria/Junior high schools

Mexico offers two types of secondary education, general and technical (vocational); both are offered in traditional school settings and via *telescundaria* (distance learning). The technical and distance learning programs have become increasingly popular in rural areas and have significantly increased the enrollment in secondary education since the 1970's.

The general secondary education program is discipline-focused and is not articulated with prior or subsequent levels of schooling. Students are enrolled in six classes daily, including language arts, mathematics, social studies, science, physical education, and health education.

The vocational secondary education program requires the same number of class hours as general secondary education, as well as additional hours ranging from 8 to 16 per week depending on the particular diploma sought, e.g., industrial or agricultural.

The distance learning program also requires the same number of hours as the traditional plan and consists of a televised 15-minute program of instruction followed by 35 minutes of independent work time supervised by a teacher. Students enrolled in this program have six classes daily.

At the secondary level of education in Mexico, despite the new national curriculum, rote memorization of facts is emphasized, placing demands on teachers to adhere to a traditional way of teaching that is not conducive to students integrating prior learning, acquiring life-long learning skills, or relating their classroom knowledge to real world knowledge.

In the United States, education at the junior high or middle school level has shifted its character from that of a "mini high school" to more of a transitional period for students moving from the nurturing environment of elementary school to the discipline-focused environment of high school. Teachers work in interdisciplinary teams represented by each discipline, e.g., math/science, language arts, social studies, and the same group of students cycles through each of these teams. Efforts to relate the subject matter through thematic unit teaching and to create more independent, self-directed learning are at the core of reform in middle school education.

Preparatorias/High school

Mexico's system of high schools (*preparatorias*) serves students from 15 to 18 years of age. *Preparatorias* may be federally or state-managed, housed within a university, or private. The curriculum is intended to broaden the students' learning and prepare them to enter the higher education system. The *bachillerato* degree given by *preparatorias* can be terminal (general education or vocational education, including teaching) or it can serve as a prerequisite to higher education. Each *preparatoria*, depending on its program, offers a different level or type of degree (see Table 1).

Table 1

Available Secondary School Degrees in Mexico by Type of Degree Granting Institution

Type of Institutions	Terminal Course of Study			University Preparation
	General	Vocational	Teaching	
Bachilleratos de Universidades				X
Colegios de Bachilleres				X
Preparatorias Federales por Cooperación				X
Bachilleratos Federalizadas				X
Bachilleratos Privados con Normatividad Propia				X
Centros de Estudio de Bachillerato				X
Bachilleratos Estatales				X
Bachilleratos Militares				X
Bachilleratos de Arte				X
Centro de Bachillerato Tecnológico Industrial y de Servicios (CBTIS)		X		X
Centro de Estudios Científicos y Tecnológicos (CECYT)		X		X
Centros de Bachillerato Tecnológico Agropecuarios (CEBTA)		X		X
Escuelas de Bachillerato Técnico		X		X
Centros de Estudios Tecnológicos del Mar (CET mar)		X		X
Bachilleratos de Institutos Tecnológicos		X		X
Centros de Estudios Tecnológicos Industrial (CETI)		X		X
Centros de Bachillerato Tecnológico Forestal (CBTF)		X		X
Bachillerato Técnico de Arte		X		X
Escuelas de Estudios Técnicos		X		
Colegio Nacional de Educación Profesional Técnica (CONALEP)	X	X		
Centros de Estudios Tecnológicos Industriales y de Servicios (CETIS)		X		
Preparatorias dependientes de las Universidades	X			X
Preparatorias estatales	X			X
Preparatorias dependientes del IPN	X			X
Preparatorias técnicas dependientes de las Instituciones de Educación Superior		X		X
Preparatorias pedagógicas				X
Escuelas Normales			X	
Escuelas Incorporadas	X	X	X	X
Centros de Estudios de Arte		X		

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Preparatorias have a two- to four-year curriculum; the majority offer a three-year program of studies. Sixty percent of the curriculum is intended to prepare the students for a higher level of schooling, 20 percent may be either terminal or pre-college curriculum, and the remaining 20 percent is strictly terminal in nature, including such skills as accounting, mechanical drawing, secretarial, etc. The curriculum includes courses in social studies, the sciences, language, culture, and technology. The course of study is considerably diverse, with approximately 187 variations among the different institutions; it is not necessarily articulated with any prior or subsequent level of schooling. A flow chart of the Mexican educational system is shown in Figure 2.

Approximately 76 percent of the elementary school student population continues on to this level of education and approximately 57 percent complete *bachillerato* degrees.

Increased enrollment in Mexico has created such a demand for teachers that new teachers are less well prepared in the disciplines they teach because the pool of teachers now includes many university students and individuals with degrees in fields other than education. They typically have little or no knowledge of the psychological, sociological, or pedagogical aspects of teaching. This is particularly true in the vocational schools where the faculty are often employed from the private sector; they bring professional and practical skills related to the students' program of study, but they lack pedagogical training. While attempts to improve their level of teaching skill have been made through short courses, conferences and practicums, there remains a high dropout rate (43 percent) for a variety of additional factors:

- an insufficient number of texts available to support students and teachers and to adequately cover the required programs of study;
- little or no incorporation of education technology either by teachers or students;
- little or no articulation between this level of schooling and the demands on the workforce;
- lack of curriculum articulation between institutions, which prevents students from being able to transfer credits from one school to another;
- little or no education support given to students in need of developing good study habits;

- little or no educational support given to students with learning disabilities, emotional needs or disadvantaged backgrounds, e.g., low socio-economic status;
- prohibitive cost of purchasing textbooks for poor households where young people's earning power is often required to support the family;
- lack of information regarding the large variety of program offerings at the various institutions.

In the United States, most high schools are organized traditionally by subject matter departments such as math, science, and English. Teachers in these schools engage in individual planning and course delivery, seeing approximately 150 students daily. To reduce the number of students faculty must see on a daily basis and create a closer sense of "community," some high schools are assigning students and teachers to smaller units called "houses." High schools in several states (e.g., Oregon, Florida, Minnesota and California) are also beginning to evaluate students by proficiency in subject areas. These initiatives are prodding higher education institutions to reform their admissions and placement policies and procedures (see section on "National and State Collaborative Relationships").

THE TEACHERS

Generally speaking, teachers in Mexico and the United States share a history of relatively low salaries, high pupil/teacher ratios, inadequate preparation, little or no time to engage in professional activities (e.g., planning, faculty development, participation in professional organizations), and a variety of responsibilities beyond the planning and delivery of instruction.

While the average beginning annual salary for a teacher in the U.S. is approximately $20,000 (Education Week, 1994), a Mexican teacher's monthly base salary ranges from N$1,400 to N$2,300[1] (N$=New pesos), depending on their level of preparation (*preparatoria* to master's degree) and the zone in which they work. Mexico is divided into three zones: north, central and south. Teachers along the Mexico/U.S. border and in the Mexican capital, both of which are considered high population density areas with a higher cost of living index, draw higher salaries. In both countries, teachers receive salary increments for degrees earned and longevity in the teaching profession. Mexican teachers' salaries, however, are only adjusted

[1] Approximately equivalent to US$210 - US$340 as of March 1995.

every five years. Low pay, coupled with inadequate libraries and other school facilities conducive to creating a professional atmosphere, contribute to a high rate of absenteeism among teachers.

All Mexican teachers in basic education must belong to the Sindicato Nacional de Trabajadores Educativos (SNTE—the Mexican National Teachers' Union). This union engages in collective bargaining on behalf of teachers in preschool, primary, secondary, some of the vocational *preparatorias* and institutes, the federally subsidized teacher preparation institutions, and the National Teaching University.

Teachers in the U.S. may belong to one of two teacher organizations: the American Federation of Teachers (AFT) or the National Education Association (NEA). Membership is not obligatory.

HIGHER EDUCATION

Mexico

The 740 Mexican institutions of higher education are either federally, state, or privately funded. Depending on the institution, students can earn higher technical degrees, bachelor's degrees (*licenciaturas*), specialist's degrees, master's degrees and doctorates. Each institution operates independently with respect to program offerings, curricula, and the hiring and promotion of faculty. The various types of institutions include universities, teachers' colleges, research centers that also offer master's or doctorate degrees in a few areas such as anthropology or the social sciences, technological universities and technological institutes (ANUIES, 1989).

The technical vocational institutions (e.g., schools of agriculture, forestry, industrial technology) are all federally funded. They are members of the Consejo del Sistema Nacional de Educación Tecnológica (COSNET—the Council for the National System of Education Technology), an advisory committee of the Secretaría de Educación Pública (SEP). COSNET is responsible for coordinating the programs offered by all of the technical vocational institutions and articulating their curricula with the needs of the country.

All Mexican higher education institutions are members of the Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES—National Association of Universities and Institutions of Higher

Education). They have also created the Programa Integral para el Desarrollo de la Educación Superior (PROIDES—Integrated Program for the Development of Higher Education), a vehicle for improving coordination among institutions and for implementing educational reform within institutions. These efforts are facilitated by ANUIES and the regional, state and national planning boards for higher education (CORPES, COEPES and CONPES, respectively).

Degrees obtained in four- to five-year programs of higher education are called *licenciaturas*. Approximately 50 percent of the students who enroll in a higher education institution complete the *licenciatura*. A considerably smaller percentage pursue graduate or doctoral level work. Of 1.1 million students in Mexican institutions, only 45,539 are graduate students and 1,631 are doctoral candidates (Levy, 1994). Funding for higher education comes primarily from the SEP, based on student enrollment; federal funding is supplemented by the state SEPs and by revenues from student enrollment. Research funds are awarded by the Consejo Nacional de Ciencia y Tecnología (CONACYT—National Council for Science and Technology) and the Sistema Nacional de Investigadores (SNI—National System of Researchers) on a competitive basis. In 1992, of $9,223,813 (US) in federal funding that was allocated to education, $1,569,862 (US) was spent on higher education (SEP/ANUIES, 1993)[2].

Of the institutions throughout the country, those in Mexico City have the highest enrollments (approximately 40 percent) followed by the states of Jalisco and Nuevo León with about 20 percent; the remaining 40 percent of postsecondary students are distributed in institutions throughout the country. Mexican institutions of higher education employed 167,520 faculty in 1992/93, of whom 76 percent worked in public colleges and universities. As in the United States, faculty are ranked when hired as *Asistente, Asociado*, or *Titular*. Within each of these ranks, however, there are three levels (A, B, and C) depending on their credentials and work experience. For example, an individual is required to have a Master's level degree for a Titular position but a doctorate level degree as well as a specified number of years teaching and a track record of publications and presentations at conferences to be ranked at the "C" level (WICHE, in press). Only 3 percent of the faculty in higher education hold a doctoral degree. Mexican universities rely heavily on part-time faculty who earn an hourly wage based on number of hours of classroom teaching. Typically, three-fourths of the faculty employed by Mexican universities are part-time.

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[2] This does not include research.

Teacher preparation programs in Mexico are primarily offered at three levels: *preparatoria, normal,* and undergraduate. Those schooled at the *preparatoria* level have the equivalent of a high school level of preparation; those schooled at the *normal* have the equivalent of a junior college preparation without the liberal arts core typically found in a junior college in the U.S.; and those schooled in undergraduate programs have the equivalent of a Bachelor of Arts or Science degree.

United States

In the United States, higher education is primarily financed by state governments through direct appropriations, grants and contracts, and financial aid awarded to students. Additional revenue is generated through student enrollment fees, and federal government and philanthropic sources. In 1991-92, state legislatures appropriated approximately $40 billion for higher education; of this total, $10.2 billion was appropriated by states in the WICHE region[3] (WICHE, 1993).

There are approximately 3,600 colleges and universities in the United States; 690 are in the WICHE region. These institutions may be either public or private and they may offer two-year degree programs (community colleges), four-year degree programs (liberal arts colleges), and/or advanced degree programs (comprehensive or research universities). Brief descriptions of the different types of institutions are found in Appendix 1.

Public institutions of higher education in the U.S. are governed by higher education boards which fall into two categories: coordinating and governing boards. Coordinating boards can be found in 27 states (five in the WICHE region) while state governing boards are found in 23 of the states (ten in the WICHE region). Both types of boards have similar responsibilities. They review budgets, recommend legislation, and develop policy regarding articulation agreements between two- and four-year institutions, tuition and financial aid, minority student participation, and general admissions requirements. State governing boards have the additional responsibilities of campus governance, e.g., the selection and evaluation of college and university presidents, internal affairs intervention, and budget implementation. These additional responsibilities are handled by either elected or governor-appointed trustees or boards of regents in colleges and universities in coordinating board states (WICHE, 1993).

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[3] States in the WICHE region include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

Two-Year Institutions. High school graduates or students who have passed a General Education Diploma (GED) exam may attend two-year colleges. At the two-year community or junior college, students generally can earn degrees in general arts or science programs and transfer the earned credits to a four-year institution. Students also have the option of enrolling in a vocational degree or certificate program at the community college or enrolling at vocational technical schools. These programs award diplomas, certificates or degrees which certify competence in a particular vocationally-oriented profession. The vocational schools are frequently accredited by the state department of education, and the community or junior colleges are accredited by the postsecondary regional accrediting association.

These two-year institutions serve an important economic development role. Because of their size and their mission, they can:

- design new curricula to meet the needs of the local business community;
- implement new curricula relatively quickly;
- enable students who cannot afford four years at expensive colleges to acquire technical skills that make them marketable or acquire college credit that is transferable to a four-year institution. Presently, a majority (54 percent) of undergraduates enrolled in public higher education in the U.S. are enrolled at two-year institutions. The WICHE states rely even more heavily on two-year institutions for preparing lower division students. In 1992, two-thirds (66 percent) of undergraduates in the WICHE region were enrolled in two-year colleges.

There are more faculty employed by community colleges than any other type of institution. There were 253,711 faculty working at community colleges in 1993, compared to 148,027 in research institutions, 77,721 in doctoral institutions, and 137,922 in comprehensive institutions. The number of faculty in two-year institutions is high because of the large number of part-time faculty employed. These individuals typically have other full-time positions in their areas of expertise, e.g., accounting, technology, etc. (Lovell and Sánchez, in press).

Four-year, Graduate and Specialized Institutions. Students who plan to attend a four-year degree-granting college or university may select from liberal arts colleges, or comprehensive or research universities. Liberal arts colleges are selective, primarily undergraduate colleges awarding more than one-half of the baccalaureate degrees in arts and sciences fields. Comprehensive institutions are

colleges and universities offering baccalaureate programs and, with a few exceptions, graduate education through the master's degree. More than one-half of their baccalaureate degrees are awarded in two or more occupational or professional disciplines such as engineering, education, or business administration. Research institutions are universities offering a full range of baccalaureate programs, with a commitment to graduate education through the doctorate degree. A high priority is given to research (WICHE, 1993). A more detailed description of the variety of institutions can be found in Appendix 1.

Students may also select from specialized institutions in which at least 50 percent of the degrees awarded are in a single discipline. Specialized institutions include those offering degrees in religion, e.g., theological seminaries or bible colleges; medicine (medical schools and medical centers); health professions (chiropractic, pharmacy and podiatry); engineering and technology; business and management; the arts (music, art, and design); law; and pedagogy. Other specialty institutions include maritime academies, military institutes, tribal colleges and universities that are tribally governed and belong to the American Indian Higher Education Consortium.

Each institution offers specific curricular plans leading toward the various kinds of degrees. Irrespective of institution, there are some similarities in program offerings because there is a recognized core of knowledge that "schooled individuals" are expected to acquire. Consensus, however, is limited to the subject areas in the core curriculum (e.g., English, mathematics, social sciences); there is less consensus concerning the content within subject areas (Western Civilization vs. Eastern Civilization) and the manner in which the curriculum is delivered. In 1992, there were 12.5 million students enrolled in undergraduate programs in public and private institutions; 1,670,024 students enrolled in graduate programs (public and private), and 40,659 students earned doctoral degrees (U.S. Department of Education, 1994).

Faculty working in these institutions are "ranked" when hired as either Assistant, Associate, or Full professors depending on their credentials, professional experience, and publication record. The level of Assistant professor is an entry level position where the individual is required to have a doctoral degree. An Associate rank requires 3-5 years of teaching experience at the university level and a record of publications in refereed journals. The level of Full professor requires 6-7 years of teaching experience and a more extensive record of publication as well as evidence of a defined area of research. The minimal time period for an individual to move from an Assistant to an Associate rank is seven years, and Associate to Full requires an additional period of three or more years.

Frequently, colleges and universities supplement their full-time faculty with part-time positions. These positions, known as 'term' or 'adjunct', often require a doctoral degree, although individuals with a master's degree or post-master's work leading toward a doctoral degree may also be hired at a considerably reduced salary scale based on course load.

Teacher preparation programs, both undergraduate and graduate, can be found in many of the degree-granting institutions in the U.S. In undergraduate institutions, teacher education programs typically are offered in the junior and senior years or the last 60 credit hours of a degree program with a minimum of 120 credit hours. In some institutions, students are exposed to teacher education courses and field work during their freshman and sophomore years. Their required courses in arts and sciences are not usually articulated with any of the teacher education courses. In graduate institutions, students enter with an undergraduate degree from an accredited institution and the graduate level teacher preparation program can lead to a teaching certificate/license, as well as a master's degree in education.

NATIONAL AND STATE COLLABORATIVE RELATIONSHIPS

In both the United States and Mexico, there is a growing need to develop effective collaborative relationships among different levels of the education establishment.

United States

In the United States, several existing practices are contributing to the fragmented nature of the education system and the failure of some students to successfully complete at least a high school education. Obstacles to a more integrated system include:

- governance of the public schools and the institutions of higher education by different agencies;
- a ten-year-old educational reform movement that has yet to be implemented in a systemic way at the state or national level, and has not made any significant impact on either higher education or teacher training;
- inadequate funding at the national, state or local levels of education;
- levels of education that do not have an articulated curriculum across levels;

- levels of education with disparate foci: at the elementary level the focus is on developing the child's social, psychological, emotional, and intellectual well being, while at the secondary level the focus is on the intellectual component with a heavy emphasis on subject matter, e.g., math, biology, history;
- an emphasis on literacy development in the early grades and a lack of emphasis on literacy in the higher grades where the reading material becomes more complex; and
- lack of time and resources for teachers to adequately prepare themselves for the changing needs of their students.

To overcome these barriers, educational reforms are being proposed by legislators, the business community, and academic scholars. Representatives of the business community have suggested adopting industry's model of research, development, dissemination and refinement to break down old cultures and create new ones; such reforms could require substantial funding (Wilson, 1994). Academic researchers and scholars, recognizing the complex issues and decision-making processes that successful schools must engage in, maintain that a variety of strategies are needed to bring about desired change (Sizer, 1992; Goodlad, 1990; Comer, 1980).

One common viewpoint among all reformers, however, is that inter-institutional collaboration is a critical element in the new wave of educational reform in the United States. The "Educate America Act", also known as the "Goals 2000 Initiative," has allocated $595 million for 1995 as a source of funding for states, universities, and school districts willing to participate in statewide educational reform through collaborative, inter-agency consortiums (Education Week, 1994). Collaboration at the national level is not yet the norm, but some promising models do exist. The replication of these successful models of collaboration are the best chance for reform, given the high cost of educational restructuring and the complex infrastructures at the federal, state, and local educational agencies and institutions. A number of national models, including Project Zero, the Coalition of Essential Schools, and the National Network for Education Renewal, are described in Appendix 2. While these models vary in scope and in focus, there are some notable similarities among them, including:

- affiliations with prominent researchers knowledgeable about educational reform, e.g., Ted Sizer, John Goodlad;
- partnerships between K-12 schools and institutions of higher education;

- heavy emphasis on professional development;
- special emphasis on serving populations of disadvantaged students;
- partnerships with the public andd/or private sector.

In addition to the national efforts, several states in the U.S. have initiated partnerships among public schools and higher education institutions to help shape educational reform. State legislatures in South Carolina and Texas have funded initiatives to support such partnerships. Monies are awarded to the partnerships on an application basis. The partnerships are varied in nature but require two-way collaboration between the institutions. Texas also requires that partnerships include the private sector.

Other states, including Indiana, California, and Minnesota, are exploring "seamless systems of education," through which competencies acquired in specific subject areas in high schools can be considered for admission and placement purposes by postsecondary institutions. The state of Oregon has already created specific timelines and a framework for implementing such a system. In 1991, the Oregon legislature mandated the development of proficiency-based high school graduation requirements and a proficiency-based college admissions system. In 1994, the Oregon State Board of Higher Education released a report entitled *Proficiency-Based Admissions Standards Study* (PASS), intended to help the State Department of Education and the higher education institutions put proficiency-based graduation and admissions systems in place. Beginning in 1996, all Oregon secondary schools would offer Certificates of Initial Mastery (CIM); in 1997 they would begin offering Certificates of Advanced Mastery (CAM). The programs leading to these certificates would enable students to progress as they demonstrate mastery of defined skills and knowledge. For university admissions purposes, traditional admissions criteria of test scores would still be retained; however, high school graduates would be expected to show skills in nine proficiency areas (reading, writing, oral expression, critical/analytical thinking, problem solving, technology, systems/integrative thinking, teamwork, and quality work) in six content areas (math, science, social studies, foreign languages, humanities/ literature and fine and performing arts). College admissions officers would be able to review students' scores and portfolios via an electronic transcript system.

The intent of this legislation and consequent need for collaboration is that both the public school system and the higher education community identify their standards and redefine an "educated person" so that high school graduates with CIM or CAM certificates can be admitted to university courses commensurate with

their level of proficiency. This is expected to eliminate introductory courses and accelerate students' time-to-degree (Massachusetts Higher Education Coordinating Council, 1995).

Mexico

In Mexico, there is no parallel collaboration for educational reform among educational institutions at the *national* level. Given the need to effectively implement the national curriculum and the growing needs of the country for an educated workforce, collaborative efforts may soon be seen as necessary to achieve national goals.

At the *state* level in Mexico, collaborative efforts between higher education institutions and the public school system are essentially administrative, such as providing orientation programs about higher education offerings and alternatives, and providing access to facilities (stadiums, theaters, etc.) for events and activities. Here too, collaborative relationships will need to be forged to achieve educational reform.

One untapped resource may be the community service requirement of Mexican higher education institutions. Upon receiving their degrees, graduates are expected to work in a community service program for a specified period of time ranging from one to two years. Graduates could fulfill their community service requirements by providing much-needed aid in primary and secondary schools, for example:

- working in schools providing release time for teachers to receive additional training;
- sharing their acquired expertise with school personnel in the areas of health, teaching, math, science, technology;
- helping to set up technology laboratories for students;
- working with students who are gifted;
- assisting with curriculum revisions.

While this may currently happen in isolated cases between individual graduates and teachers or schools, there is no system or agency in place to coordinate these services with the schools. The establishment of such a service at the statewide level

could enhance the collaboration between institutions of higher education and the public schools.

OTHER MODELS OF COLLABORATION

In the United States, there are many *individual* examples of collaboration between agencies. Some examples of these inter-agency efforts are briefly described below.

- The Texas legislature funds an Academy of Math and Science at the University of North Texas (UNT) in Denton, for students in their junior and senior years of high school. Students gifted in these two subjects are selected from throughout the state during their sophomore year. They attend UNT for two years and take a heavy concentration of math, science, and liberal arts courses. At the successful conclusion of the two years they graduate with a high school diploma and 60 hours of college credit. This credit can be applied toward undergraduate degrees at a variety of institutions throughout the country because of articulated agreements.

- The Initial Teacher Education Program at the University of Colorado at Denver is a graduate-level teacher licensing program with a strong field component in 14 established partner schools. University faculty team-teach various courses with school teachers, spending full days weekly at their designated partner school; they also provide faculty development to their partner school teachers and conduct collaborative research to improve the schooling process.

- Bridging the Educational Scene for Teachers of Tomorrow (BESTT) is a "grow your own" project in Texas designed to nurture middle school and high school students and paraprofessionals so that they enter the teaching profession, particularly in areas where there is a critical teacher shortage. Opportunities are provided for students to enroll concurrently in high school and college courses and for paraprofessionals to work and study toward a teacher education credential. Specific goals of this program are to increase the teaching workforce and especially the number of minorities entering the teaching field.

- An articulation agreement between the Colorado Community College (CCC) and Metropolitan State College of Denver (MSCD) facilitates paraprofessionals earning teaching credentials because credit earned at CCC can be directly applied to the undergraduate teacher education degree at MSCD.

- District 60 public schools in Pueblo, Colorado and the University of Southern Colorado have a formal agreement that encompasses issues of administration, facility maintenance, college credit for courses taken in high school, and faculty exchanges. For example, the superintendent of schools serves as vice president of the university and reports to both the university president and the local school district's board of education; high school students take honors or advanced placement courses and receive high school and college credit; university faculty teach at local schools and public school faculty teach courses at the university.

CONSIDERATIONS FOR EXPANDING BINATIONAL COLLABORATION

Both Mexico and the United States have a history of educational reform efforts since the 1970's. Despite two decades of reform, however, neither country has a consolidated, systemic national reform movement. While there are compelling reasons why each country has not achieved greater success in this arena, there are also compelling political and economic reasons for the two countries to initiate collaborative efforts to improve schooling on both sides of the border.

The preceding description of the Mexican and U.S. systems of education clearly shows that the two countries share similar concerns at every level of education despite apparent differences in program offerings. It is these differences, in fact, that can yield rich opportunities for collaboration in addressing the mutual educational concerns. The variety in program offerings is fertile ground for binational collaborations focused on geographic proximity, technical/vocational needs, academic curricula, and faculty development. One example of this binational collaboration is the U.S.-Mexico Teacher Exchange Program at the University of Texas at El Paso. The effort pairs school districts on either side of the border and provides training in technology and innovative instructional strategies, arranges site visits, and sponsors information exchange forums.

For such collaborative efforts to be effective, some specific conditions must be established. These conditions include:

- **a consortium of individuals with a common vision.** The consortium should be comprised of individuals with personal knowledge of the infrastructure of the agencies and institutions involved. This will facilitate an understanding of the contributions that can be made by each of the partners in the collaborative effort. Initial efforts should focus on articulating the goals and outcomes of the effort.

- **allocated monies from federal, state, and/or private agencies.** All partners should make a financial commitment to support the collaboration. The financial responsibility will give each partner more of a vested interest in the implementation and success of the programs.

- **a process for systematically developing and implementing the collaboration**. All members of the partnership should play an active role in articulating the details of how the goals will be accomplished. The details should include specific objectives, the activities related to each objective, a timeline for accomplishing the activities, and the person(s) responsible.

- **a process for continuous evaluation and modification of the project design.** An evaluation design that monitors the progress and success of the collaboration on an on-going basis as well as a summative basis should be developed to compliment the implementation design. Similarly, the evaluation design should frame the questions that will determine the success of the project, the activities needed to collect data to answer each of the evaluation questions, the instruments that will be developed/utilized to collect the data, a timeline for accomplishing the data collection activities, and the person(s) responsible. The audience for each of the data should also be defined, as it will dictate the level of detail and the extensiveness of the report to be submitted.

- **willingness to make a long-term commitment to the effort.** One major pitfall of most collaborative efforts is the turnover of agencies, institutions, or individuals involved. Continuity among the partners is essential to maintaining a vision and a commitment to the original terms of the implementation and evaluation plan.

- **a philosophical underpinning that is shared regardless of differences among participants.** The agreement between the partners should embrace a global vision that will be timeless should the original membership of the partnership change.

- **an overarching commitment to improving education for all children.** Competing agendas of individual members or partners can also be a pitfall of collaborative efforts. When *the improvement of the education for all children* is at the core of any collaborative effort, it can be a unifying force.

A final point to consider in such collaborations is the human element. Collaborative efforts make considerable demands on the time and resources of the partners. Further, successful efforts require training in developing and implementing successful partnerships, in making collaborative decisions, and following a protocol for addressing conflict. Long-term commitments such as those being proposed in this paper would be well served by an initial investment of time and effort to acquire these skills in a common setting.

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Appendix 1

The Carnegie Classification of Institutions of Higher Education

Four-year institutions of higher education are classified using the newly released 1994 edition of the Carnegie classification of institutions of higher education. The 1994 classification scheme groups institutions on the basis of the highest level of degrees awarded, number of degrees awarded, level of federal research support (for research institutions), and selectivity of admissions (for baccalaureate institutions).

Two significant changes have been made to the classification scheme. First, the comprehensive category has been renamed "Master's (Comprehensive)". It includes institutions awarding both bachelor's and master's degrees. Institutions are classified as Master's I or Master's II based on the number of master's degrees awarded. Enrollment is no longer a factor. Second, the liberal arts category is now called "Baccalaureate (Liberal Arts)." Baccalaureate I and Baccalaureate II institutions are primarily undergraduate institutions that are distinguished based on the percent of degrees they award in the liberal arts and the selectivity of their admissions.

The descriptions of the classifications that follow are taken from *A Classification of Institutions of Higher Education, 1994 Edition* (Carnegie Foundation, 1994).

Research Universities I: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year.[4] In addition, they receive annually $40-million in federal support.[5]

Research Universities II: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year. In addition, they receive annually between $15.5-million and $40-million in federal support.

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[4] The years used for averaging the number of degrees awarded are 1988-89, 1989-90 and 1990-91.
[5] The years used in averaging annual federal support are 1989, 1990, and 1991.

Doctoral Universities I: In addition to offering a full range of baccalaureate programs, the mission of these institutions includes a commitment to graduate education through the doctorate. They award at least 40 doctoral degrees annually in five or more disciplines.

Doctoral Universities II: In addition to offering a full range of baccalaureate programs, the mission of these institutions includes a commitment to graduate education through the doctorate. They award at least 10 doctoral degrees annually in three or more disciplines, or 20 or more doctoral degrees in one or more disciplines.

Master's (Comprehensive) Universities and Colleges I: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the master's degree. They award 40 or more master's degrees annually in three or more disciplines.

Master's (Comprehensive) Universities and Colleges II: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the master's degree. They award 20 or more master's degrees annually in one or more disciplines.

Baccalaureate (Liberal Arts) Colleges I: These institutions are primarily undergraduate colleges with major emphasis on baccalaureate degree programs. They are selective in admissions and award 40 percent or more of their baccalaureate degrees in liberal arts fields.[6]

Baccalaureate (Liberal Arts) Colleges II: These institutions are primarily undergraduate colleges with major emphasis on baccalaureate degree programs. They are less selective in admissions or they award less than 40 percent of their baccalaureate degrees in liberal arts fields.

Professional Schools and Specialized Institutions: These institutions offer degrees ranging from the bachelor's to the doctorate. At least 50 percent of the degrees awarded by these institutions are in a specialized field.[7]

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[6] The liberal arts fields include: area and ethnic studies, English language and literature, foreign languages, letters, liberal and general studies, life sciences, mathematics, multi- and interdisciplinary studies, philosophy and religion, physical sciences, psychology, social sciences, and the visual and performing arts.

[7] Specialized institutions include: theological seminaries; medical schools, medical centers, and other specialized health profession schools; schools of engineering and technology; schools of business and management; schools of art, music, and design; law schools; teachers colleges; other specialized institutions; and tribal colleges.

Appendix 2

Brief Descriptions of Collaborative Projects in the United States

Project Zero, founded in 1967, is housed in the Harvard School of Graduate Education. It has undertaken fourteen field-based research projects aimed at developing new approaches to learning. The project used its findings to compile and disseminate handbooks and train educators in the processes utilized.

Coalition of Essential Schools, founded in 1984, by Theodore R. Sizer is housed at Brown University. The Coalition is a network of 184 high schools focused on the reform of their overall structure, curriculum and assessment procedures, predicated on Sizer's 9 Common Principles.

Center for Educational Renewal, founded in 1985 by John I. Goodlad, is housed at the University of Washington. It has partnerships in 16 settings that include 25 colleges and universities, 93 school districts and 275 schools. Its primary focus is on the simultaneous renewal of Pk-12 schools and institutions of higher education engaged in teacher preparation with Goodlad's 19 postulates as the guiding framework.

School Development Program, founded in 1968 by James P. Comer, is housed at the Yale Child Study Center. Heavily financed by private foundations, the program has partnerships with 11 universities and school districts. Its dissemination and replication strategies operate through the training of district facilitators and principals and the sponsoring of regional professional development centers, both of which are supported by national faculty and staff of the School Development Program. They have also partnered with Edward Zigler's Schools of the 21st Century to offer a set of comprehensive family support services.

National Center for Effective Schools, founded in 1985, is housed at the University of Wisconsin's Center for Education Research. Its focus is on the training of trainers and facilitators with an emphasis on school, district, and state teams. The training is based on 10 professional development modules and a computer software package aimed at the effective schools process.

Success for All, founded in 1987, is housed in the Center for Research on Effective Schooling for Disadvantaged Students at Johns Hopkins University. The focus of the program is on organizing resources at school sites to ensure that every student in a Chapter 1 (federally funded program) school reaches grade 3 with adequate reading skills. Training is provided by staff members as well as at two regional training sites located in the Southwestern Regional Laboratory in Southern California and at the University of Memphis.

Accelerated Schools Project, founded in 196-87 by Henry M. Levin, is housed at the National Center for the Accelerated Schools Project at Stanford University. Its primary emphasis is in targeting at-risk children and training teams of educators at the local, state and university levels to provide the type of learning experiences usually reserved for gifted students.

National Paideia Center, founded in 1988 by Mortimer J. Adler, is housed at the University of North Carolina at Chapel Hill. Its focus is on working with communities and schools to establish schools that engage children in interactive and challenging environments.

Turning Points, founded in 1990, is a Carnegie Foundation initiative to target middle grades education. It provides financial and technical assistance to approximately 80 schools in disadvantaged communities in 15 states.

There are numerous other national initiatives helping to shape educational reform and the formation of partnerships. Among these are the American Federation of Teachers' Educational Research and Dissemination Program; the National Education Association's National Center for Innovation; National Board for Professional Teaching Standards; the National Science Foundation; and the Education Commission of the States' Re: Learning. The first two are teacher union organizations, the third is a nonprofit independent organization seeking to establish a national exam for teaching, the fourth is a major funding source for math and science projects and has initiated 24 statewide systemic initiatives requiring higher education and public school collaborations; and the fifth is geared toward helping states design reform initiatives that are legislatively funded.

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